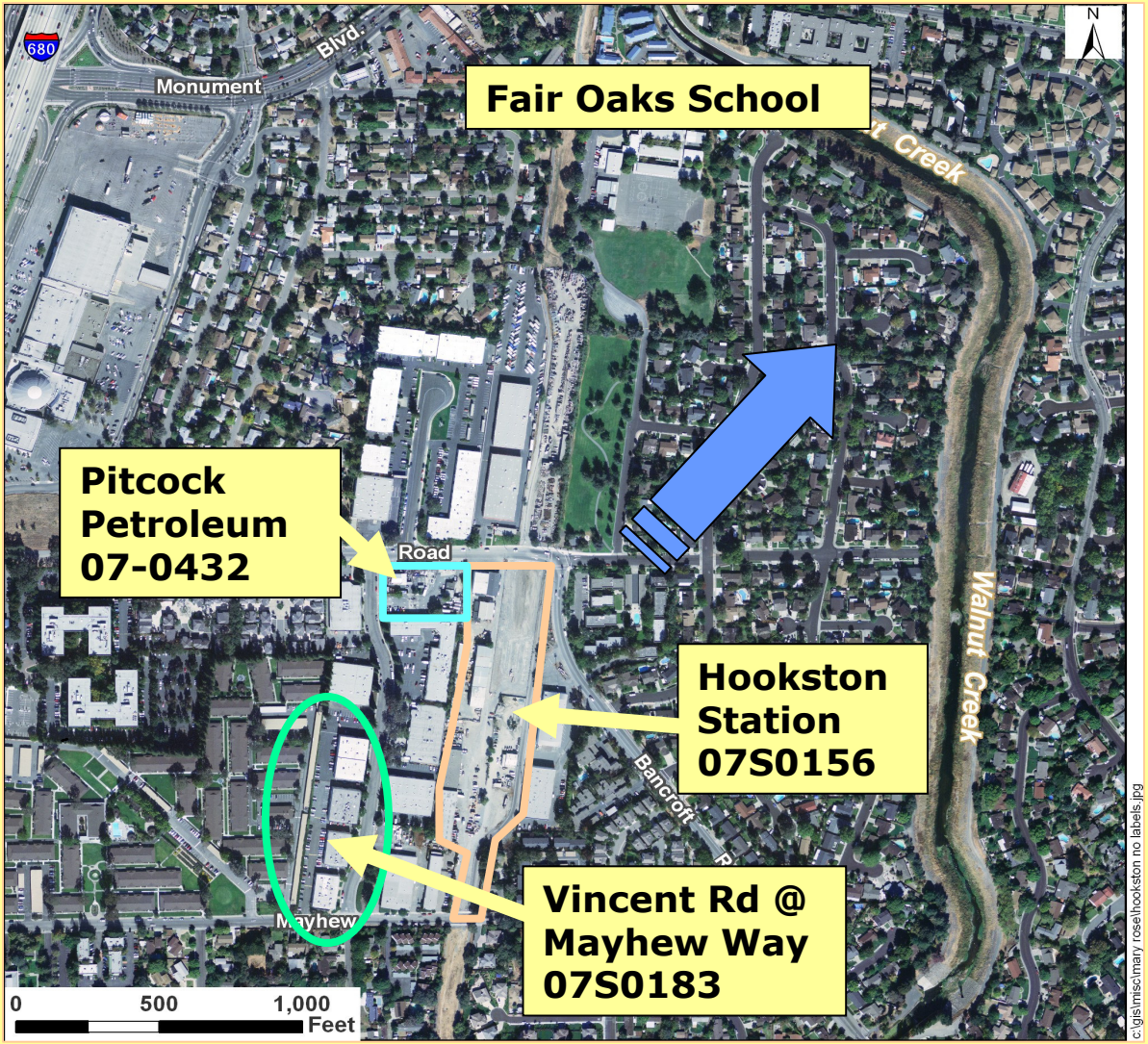
Hookston Station Site and Adjacent Areas

Summary of Baseline Risk Assessment

Mary Rose Cassa, Engineering Geologist
San Francisco Bay Regional Water Quality Control Board

Vicinity Map



Case Background

1970s	**Solvent release** **(ET Mag Wheels as presumed source)**
1989	**Contamination discovered during property transfer**
2000	**Lead Agency Determination**
2000	**Water Board oversight began**
2003	**Site Cleanup Order issued for groundwater contamination**
2004	**Vapor intrusion issue discovered**
2006	**Baseline Risk Assessment approved**

Baseline Risk Assessment

- Required by Cleanup Order
- Produced by Responsible Parties
- Approved by Water Board on March 10, 2006
- Subject of April Fact Sheet
- Forward-looking (current-future)
- Sets foundation for Cleanup

Baseline Risk Assessment

Does

- **Quantitatively estimate human exposures to chemicals**
  - **On-site soil and indoor air**
  - **Off-site groundwater, indoor air, Walnut Creek**
- **Include chemicals that are not from Hookston Station Site**
- **Use conservative assumptions**
- **Guide future cleanup**

Baseline Risk Assessment

<u>Does not</u>:

- **Evaluate potential risks due to use of ground water for drinking water**
- **Evaluate risks due to past exposures**

Am I Safe?

Yes*

Am I Safe?

Yes*

* Chemicals in groundwater pose no short-term risk
* Additional long-term risk is in a range that requires further consideration for cleanup
* Water Board requires measures to reduce risk

Environmental Concerns/Pathways

- **Groundwater**
  - **Non-drinking water uses (e.g., irrigation, filling swimming pools)**
  - **Data from residential wells**
- **Indoor Air**
  - **Results from 2004 & 2005 sampling**
- **Soil (onsite only)**

Risk Assessment Components

- **Data Evaluation**
  - **From remedial investigation**
- **Exposure Assessment**
  - **How much?**
- **Toxicity Assessment**
  - **How much/what kind of harm?**
- **Risk Characterization**
  - **Identify completed exposure pathways**

Data Evaluation: Chemicals

- All chemicals detected
  - Groundwater
  - Soil gas
  - Indoor/outdoor air
  - Onsite soil
- Not all chemicals are from Hookston Station Site

Chemicals by Location

Chemical	Onsite			Offsite		
	Soil	GW	Indoor Air	GW	Indoor Air	Creek
Hookston						
TCE + +		X	X	X	X	X
Arsenic	X					
Non-Hookston						
PCE	X	X		X	X	X
Fuels	X	X		X	X	X
Other VOC				X	X	X

Exposure Assessment

- **How much?**
- **How often?**
- **How long?**

Toxicity Assessment

- **Will it hurt me / my kids / my dog?**
- **How much of a substance?**
- **What kind of harm?**
  - **Non-Cancer**
  - **Cancer**

Offsite Exposure Pathways

Source	Exposure Medium	Exposure Route			Pathway Complete?
		Ingestion	Inhalation	Dermal	
Affected Ground-water	Ground-water	X	X	X	Yes
	Outdoor Air		X		Yes
	Indoor Air		X		Yes
	Surface Water	X	X		Yes

Offsite Risk: Exposure to chemicals in indoor air, groundwater, surface water

Chemical	Pathway	Cancer	Non-Cancer
VOCs TCE + +	All Pathways*	in the range in the range	v. low risk
VOCs TCE + +	Indoor Air Highest Indoor Air	in the range in the range	No risk v. low risk
VOCs	Swimming Pool Irrigation	in the range in the range	No risk No Risk
VOCs	Walnut Creek	in the range	No risk

TCE + + = Hookston chemicals (TCE and breakdown products)

*Indoor air, irrigation, swimming pool, Walnut Creek

Am I Safe?

Yes*

* **Chemicals in groundwater pose no short-term risk**
* **Additional long-term risk is within a range that requires further consideration for cleanup**
* **Water Board requires measures to reduce risk**

What Next?

Manage the Risk – Reduce the Risk

- **Education**
  - **Fact Sheets**
  - **Meetings like this**
- **Mitigation**
  - **Crawl space ventilation systems**
  - **Destruction of backyard wells**
- **Cleanup**
  - **Propose Cleanup Plan (RPs)**
  - **Approve Cleanup Plan (Water Board)**
  - **Implement Cleanup Plan (RPs)**